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10/529,531

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EXAMINER

ZERVIGON, RUDY

ART UNIT

PAPER NUMBER

1763

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/529,531

Applicant(s)

FAYET ET AL.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/29/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-9, drawn to a device for carrying out a plasma enhanced process, classified in class 118, subclass 723E.
 - II. Claims 10-12, drawn to the use of the device of claims 1-9, classified in class 427, subclass 1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process, for example, a non-plasma process such as in CVD.
3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

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5. During a telephone conversation with Jim Balazs (2165669700) on January 16-18 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-12 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. Evidence of concealment of the best mode is based upon the fact that Applicant's "positioning means", "gas supply means", "means (see rejections above) for producing a high frequency alternating electric field " are not supported by the specification.

9. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant's "positioning means",

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“gas supply means”, “means (see rejections above) for producing a high frequency alternating electric field “ are not supported by the specification.

10. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Means for positioning that critical or essential to the practice of the invention, but not included in the claims is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant’s “positioning means”, “gas supply means”, and “means (see rejections above) for producing a high frequency alternating electric field “ are not supported by the specification.

11. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claims 1-9 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: Elements supporting Applicant’s “positioning means”, “gas supply means”, and “means (see rejections above) for producing a high frequency alternating electric field “ are which not supported by the specification.

13. Claim 1 recites the limitation “the surface to be treated”. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102/103

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1, 5, and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hartig; Klaus et al. (US 4863756 A). Hartig teaches a device (Figure 1; column 4, line 62 - column 5, line 43) for carrying out a plasma enhanced process, the device (Figure 1; column 4, line 62 - column 5, line 43) comprising within a vacuum chamber (4; Figure 1; column 4, line 62 - column 5, line 43) a magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43), a positioning means (16, 17, 14,8,9; Figure 1; column 4, line 62 - column 5, line 43 - see 112, 6th rejections above) and a gas supply means (18,19; Figure 1; column 4, line 62 - column 5, line 43 - see 112, 6th rejections above), the magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43) comprising a flat magnetron face (10; Figure 1; column 4, line 62 - column 5, line 43) with peripheral and central magnetic poles ("N", "S"; Figure 1; column 4, line 62 - column 5, line 43) of opposite polarities and further comprising means (see rejections above) for producing a high frequency alternating electric field (13, 11, Figure 1; column 5, lines 16-26) the positioning means (16, 17, 14,8,9; Figure 1; column 4, line 62 - column 5, line 43 - see 112, 6th rejections above) being equipped for positioning a substrate (15; Figure 1) with a surface to be treated facing the magnetron face (10; Figure 1) and the gas supply means (18,19; Figure 1; column 4, line 62 - column 5, line 43 -

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see 112, 6th rejections above) being equipped for supplying a process gas or process gas mixture to the space between the magnetron face (10; Figure 1) and the surface to be treated, wherein the magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43) is of the unbalanced type and that a distance between the magnetron face (10; Figure 1) and the positioning means (16, 17, 14,8,9; Figure 1; column 4, line 62 - column 5, line 43 - see 112, 6th rejections above) is adapted to the magnetic field created by the magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43) such that there is a visible plasma band running between darker tunnels (11) formed by magnetic field lines extending between peripheral and central magnetic poles ("N", "S"; Figure 1; column 4, line 62 - column 5, line 43) of the magnetron face (10; Figure 1) and the surface to be treated, the plasma band having a minimum width but having towards the surface to be treated a homogeneous brightness, as claimed by claim 1. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01).

Hartig further teaches:

- i. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 1, wherein the magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43) comprises an electrode element (10; Figure 1) being connected to a source of an alternating voltage (13), as claimed by claim 5
- ii. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 5, wherein the positioning means (16, 17, 14,8,9; Figure 1; column 4, line 62 - column 5, line 43 - see 112, 6th rejections above) and/or the substrate (15; Figure 1) are arranged to

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be electrically grounded, electrically floating or negatively biased (column 5; lines 16-26), as claimed by claim 6

In the event that Hartig's apparatus is not deemed to exhibit the claimed functional properties, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the position of Hartig's magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43).

Motivation to optimize the position of Hartig's magnetron electrode is for avoiding flaking and peeling of coated articles as taught by Hartig (column 4; lines 6-18; 31-40).

17. Claims 2-4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartig; Klaus et al. (US 4863756 A). Hartig is discussed above. Hartig does not teach:

- i. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 1, wherein a distance (A-C) between the surface to be treated and the magnetron face (10; Figure 1) is at least 2% larger than a visible height (A-B) of the tunnels (11), as claimed by claim 2
- ii. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 1, wherein a distance (A-C) between the surface to be treated and the magnetron face (10; Figure 1) is at most 20% larger than a visible height (A-B) of the tunnels (11), as claimed by claim 3
- iii. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 1, wherein a magnetic strength of the central magnetic pole of the magnetron face (10; Figure 1) is about half of a magnetic strength of the peripheral pole, as claimed by claim

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- iv. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 1, wherein the positioning means (16, 17, 14,8,9; Figure 1; column 4, line 62 - column 5, line 43 - see 112, 6th rejections above) is a rotating drum (16, 17; Figure 1; column 4, line 62 - column 5, line 43) and wherein a plurality of magnetron electrodes (6; Figure 1; column 4, line 62 - column 5, line 43) having rectangular faces arranged with their length parallel to the rotation axis of the drum (16, 17; Figure 1; column 4, line 62 - column 5, line 43) are arranged around part of a circumference of the drum (16, 17; Figure 1; column 4, line 62 - column 5, line 43), as claimed by claim 7
- v. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 7, wherein the gas supply means (18,19; Figure 1; column 4, line 62 - column 5, line 43 - see 112, 6th rejections above) comprises gas supply lines extending parallel to the drum axis between the magnetron faces (6; Figure 1; column 4, line 62 - column 5, line 43)', as claimed by claim 8
- vi. The device (Figure 1; column 4, line 62 - column 5, line 43) according to claim 7, wherein each of the plurality of magnetrons (6; Figure 1; column 4, line 62 - column 5, line 43) is connected to a separate power supply (13), as claimed by claim 9

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the position of and duplicate the number of Hartig's magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43).

Motivation to optimize the position of and duplicate the number of Hartig's magnetron electrode (6; Figure 1; column 4, line 62 - column 5, line 43) is for avoiding flaking and peeling of coated

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articles as taught by Hartig (column 4; lines 6-18; 31-40), and for processing substrates of longer length for greater throughput, respectively.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

Rudy Zervigon
1/22/7